



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: J.G. BEDNORZ ET AL. : Date: March 31, 1988
Filed: 05/22/87 : Serial No.: 06/053,307
Group Art Unit: 115 : Examiner: Dennis Albrecht

FOR: NEW SUPERCONDUCTIVE COMPOUNDS HAVING HIGH TRANSITION TEMPERATURE,
AND METHODS FOR THEIR USE AND PREPARATION

SUBMISSION OF DECLARATIONS

RE: ACTS OF INVENTION IN THE UNITED STATES

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Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Declarations in support of invention in the United States are
offered by the following:

J. Georg Bednorz, inventor
Carl A. Mueller, inventor
Richard L. Greene
Albert M. Torressen
Chang C. Tsuei
Sung Il Park
Praveen Chaudhari
Alexis P. Malozemoff
Paul M. Horn
Cheng-Chung John Chi
Bradford G. Orr

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These declarations describe acts of inventorship in the United States by and on behalf of the inventors Bednorz and Mueller, establishing the attainment of superconductivity in samples of Ba-La-Cu-O at onset temperatures greater than 23°K . These acts duplicate and extend the work first described by Bednorz and Mueller in Z. Phys. B-Condensed Matter, Vol. 64, p. 189, September, 1986. This technical article, as well as an IBM internal activity report describing the work of Bednorz and Mueller, were introduced into the United States in September, 1986 and established conception in the United States. The work of Greene and Tsuei, on behalf of and under the guidance and cooperation of Bednorz and Mueller, establishes reductions to practice in the United States of a superconductor having a transition temperature greater than 23°K . This work was witnessed and corroborated by the other people whose declarations are included.

A declaration by Dr. Bradford Orr had not been executed and returned in time to include it with the other declarations. It will be forwarded as soon as it is received (estimated delay - less than one week). The same is true for the declarations of the inventors Bednorz and Mueller. Their declaration, although having been executed by one of them (Bednorz) had not been executed by the other in time to include herewith. It will be forwarded to the Patent and Trademark Office as soon as it is received (which should be in about one week). The declaration of Praveen Chaudhari will be executed April 1, 1988 and then forwarded to the Patent and Trademark Office.

The declarations, generally describe three types of measurements performed prior to about December 8, 1986, on samples provided by Bednorz and Mueller, which are the following:

- (1) Resistivity versus temperature (Chang C. Tsuei)
- (2) Resistivity versus temperature in a magnetic field (Richard L. Greene)
- (3) Specific Heat (Richard L. Greene)

Measurement 1

Resistivity versus temperature was done by Chang C. Tsuei. This confirmed the data presented by Bednorz and Mueller in their Z. Phys. B. article. Witnesses corroborating Tsuei's measurements include Sung Il

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Park, Albert M. Torressen, Paul M. Horn, Bradford G. Orr, Praveen Chaudhari, A.P. Malozemoff.

Measurement 2

Resistivity versus temperature in a magnetic field was done by Richard L. Greene. This further confirmed the data of Bednorz and Mueller and clearly established the superconducting nature of the samples provided by Bednorz and Mueller. Witnesses to this work include Albert M. Torressen and Thomas Penny.

Measurement 3

Specific heat measurements were done by Richard L. Greene and Albert M. Torressen and supplemented Greene's resistivity versus temperature measurements. Witnesses include Albert M. Torressen, Chang C. Tsuei, S. Von Molnar, M. W. Shafer, Sung Il Park, Thomas Penny and Arthur R. Williams.

Relevant Law

35 U.S.C. 104

Acts of Conception: Mortsell v. Laurila, 301 F.2d 947, 133 USPQ 380 (1962)
In re Tansel 253 F.2d 241, 117 USPQ 188 (1958)
Clevenger v. Kooi, 190 USPQ 188 (1974)

Acts of Reduction to Practice: DeKando v. Armstrong 37 App. D.C. 314

Claims

All of the claims in this application are directed to the broad concepts first discovered and announced by Bednorz and Mueller. This discovery is attributed to these inventors by the rest of the world-wide

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technical community, and only these inventors are entitled to broad claims to their discovery of high T_c copper oxide superconductors.

It is respectfully urged that the enclosed declarations and the ones to be filed very soon establish conception, diligence, and reduction to practice of the invention by the inventors in the United States at an early date prior to any reference known to applicants.

Respectfully submitted,

By



Jackson E. Stanland - Attorney
Registration No. 24,444
(914) 241-4059

IBM Corporation
Intellectual Property Law Dept.
P.O. Box 218
Yorktown Heights, N.Y. 10598

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